

What Is Claimed Is:

1. A valve actuator for actuating a gas exchange valve of an internal combustion engine, comprising:
 - a valve shaft having a shaft end;
 - a sleeve-shaped positioning piston connected to the valve shaft;
 - at least two shell-shaped wedge parts enclosing the shaft end of the valve shaft, the wedge parts being axially connected on their inner side to the shaft end in a form-locked and rotatable manner;
 - a section shaped like a conical casing situated on a radial outer peripheral surface of the wedge parts;
 - a conical clamp sleeve; and
 - a separate threaded sleeve having one of (a) a threaded connection to the positioning piston and (b) a component connected to the positioning piston, the threaded sleeve axially clamping the wedge parts to the conical clamp sleeve via the section shaped like a conical casing.
2. The valve actuator according to claim 1, wherein the conical clamp sleeve is implemented in one piece on the threaded sleeve.
3. The valve actuator according to claim 2, wherein the threaded sleeve has an internal thread which is connected to one of (a) an external thread on the positioning piston and (b) the component connected to the positioning piston.
4. The valve actuator according to claim 1, further comprising a threaded bolt screwing together the threaded sleeve with the positioning piston.
5. The valve actuator according to claim 1, wherein the threaded sleeve is screwed directly onto a projection of the positioning piston proximal to a combustion chamber of the engine.
6. The valve actuator according to claim 1, wherein the wedge parts and the valve shaft are connected to one another rotatably and axially in a form-locked

manner via at least one radial groove and at least one radial bead, which engages therein.

7. The valve actuator according to claim 6, wherein the at least one groove is situated on the valve shaft and the at least one bead is situated on the wedge parts.

8. The valve actuator according to claim 7, wherein the at least one groove includes three peripheral grooves situated on a threaded bolt, the at least one bead includes three corresponding beads, and each of the three corresponding beads engages in the peripheral grooves.